# Apparao M. Rao

Fellow, American Association for the Advancement of Science
Fellow, American Physical Association
Associate Dean for Discovery, College of Science, Clemson University
Director, Clemson Nanomaterials Institute, Clemson University
Robert A. Bowen Professor of Physics, Clemson University

**Biography**

Professor Rao received his PhD in 1989 in experimental Condensed Matter Physics from the University of Kentucky, and joined the Clemson University faculty in 2000. He has held appointments at Massachusetts Institute of Technology (Post-doctoral Associate (1989-1991)) and the University of Kentucky (Assistant Research Professor (1991-1996), Senior Research Scientist (1996 – 2000)).

Prof. Rao contributed to the advancement of nanomaterials research through his pioneering spectroscopic studies of low dimensional carbon allotropes, which include the polymerized fullerenes and carbon nanotubes. He has developed novel scalable synthesis methods for oxide nanomaterials and carbon nanotubes with controlled morphologies such as, the branched or coiled carbon nanotubes. His research has strongly enhanced the field of carbon science and technology in terms of discovery of novel phenomena in carbon nanomaterials, and device development.

Prof. Rao's current research focuses on the fundamental properties and applications of a broad range of nanomaterials. Within the purview of study at the Clemson Nanomaterials Institute (CNI) are carbon nanotubes, graphene, fullerenes, gold and silver nanoparticles, bismuth telluride, tin selenide, molybdenum disulfide, and other emerging nanomaterials. Through fundamental science, CNI is innovating novel applications of such nanomaterials for energy generation and storage, and biomedical applications. For example in the energy sector, improved batteries and supercapacitors, photovoltaics, and triboelectric energy generation are some of the recent pursuits at CNI. Another important facet of CNI research is scalable manufacturing and integration of nanomaterials into commercially relevant products.

**Honors & Awards**

- **2018** Associate Dean for Discovery, College of Science, Clemson University
- **2016** Recognized by the Board of Trustees as one of the top three faculty members in the College of Engineering and Science, Clemson University.
- **2014** Governor's Award for Excellence in Scientific Research, South Carolina.
- **2012** Alumni Award for Outstanding Achievement in Research, Clemson University.
- **2011** Fellow, American Association for the Advancement of Science.
- **2010** R. A. Bowen Professor of Physics, Clemson University
- **2008** Fellow, American Physical Society
- **2007** Panel member for the World Technology Evaluation Center to evaluate carbon nanotube manufacturing capabilities in Europe and Asia**.**
- **2006** Faculty Achievement Award, Clemson University, for exemplary leadership in the sciences.